is very difficult to detach from the rock: it is absolutely necessary to scratch it off with a knife. A very small plant. The capsules hardly reach beyond the top of the stem."

As a part of this interesting flora, Father Beaulac has written a most charming biographical sketch of Father Dupret. It is a beautiful picture of a refined man in the cloisters growing old serenely, because blessed with numerous friends and varied intellectual interests.—CLARENCE HINCKLEY KNOWLTON, Hingham, Massachusetts.

THREE DAYS OF BOTANIZING IN SOUTHEASTERN VIRGINIA

M. L. FERNALD AND LUDLOW GRISCOM

(*Continued from page 157*)

LAPORTEA CANADENSIS (L.) Gaudich. VIRGINIA: ditch at border of gum swamp south of North Landing, Norfolk Co., no. 2871.

Not represented in the Gray Herbarium from the coastal plain south of New York.

POLYGONUM ARIFOLIUM L., var. **lentiforme**, var. nov., a forma typica recedit achaeniis minoribus lenticularibusque vix gibbosis 3–3.5 mm. latis 2.2–2.6 mm. crassis.—Prince Edward Island to southern Ontario, south to New Jersey, Pennsylvania, Ohio and Michigan. TYPE: swamp along Great Brook, Southwick, MASSACHUSETTS, *F. C. Seymour*, no. 251 (in Gray Herb.).

The common *Polygonum arifolium* of southeastern Canada and the northeastern States has the achene very definitely smaller than in the more southeastern plant. All material in fruit from the District of Columbia southward has the achenes 4–4.2 mm. broad and 3–3.2 mm. thick, with noticeably more umbonate sides. In view of the original Linnean citation of the species as coming from "Virginia, Florida," the southern plant must stand as typical *P. arifolium*.

LESPEDEZA ACUTICARPA Mackenz. & Bush. VIRGINIA: dry border of gum swamp, Pungo Causeway, near Land of Promise, Princess Anne Co., no. 2838.

Our material is a close match for several sheets of the Missouri plant distributed by Bush. It is apparently the first from the Atlantic slope.

VARIATIONS OF RHUS COPALLINA.—The shrub and small tree of southeastern Virginia impressed us, as it did later Fernald and Long, by the numerous pairs of narrow leaflets, as contrasted with the fewer and broader leaflets of the northern and wide-ranging shrub. Linnaeus, in publishing the species, rested it upon earlier citations, one of them a specimen of Clayton's (no. 728, described by Gronovius),

the other a very conventionalized and barely recognizable figure of Plukenet's. The Clayton plant, having been definitely studied by Linnaeus, should be accepted as the type. Thanks to a life-sized tracing of the type, kindly supplied by Professor H. W. Rickett, who recently spent some time at the British Museum, we are now able to identify *R. copallina* as the small tree of the southeastern United States (south into Florida) with the lance-oblong leaflets definitely attenuate at base. This typical *R. copallina* extends locally along the coast to southeastern New York.

The more generally distributed variation, common from southern Maine to Michigan, southward into the upland of North Carolina and to Oklahoma, has the comparatively few leaflets more ovate-lanceolate or short-oblong and rounded at the base. This is var. *latifolia* Engler in DC. Mon. iv. 384 (1883).

In the Southwest, especially in Texas, the leaflets are lance-falcate, smaller and narrower than in typical *R. copallina*. This is var. *lanceolata* Gray, Journ. Bost. Soc. Nat. Hist. vi. 158 (1850).

In southern Florida the species is represented by var. *leucantha* (Jacq.) DC. Prod. ii. 68 (1825). This was based upon *R. leucantha* Jacq. Hort. Schoenb. iii. 50. t. 342 (1798). *R. leucantha* was a cultivated shrub of unknown origin. By Small it is restricted to the West Indies and the Everglade Keys of Florida. Apparently the only collection from the West Indies is *C. Wright*, no. 2290 from Cuba, first recorded by Grisebach as *R. copallina*, var. and cited by Engler (along with a Rugel specimen from Portsmouth, Virginia which is true *R. copallina*) as the basis of his *R. copallina*, var. *angustialata* Engler, l. c. Engler cited *R. leucantha* as a direct synonym of this variety. Wright's original field-label on the sheet in the Gray Herbarium states that it was CULTIVATED at Pinales Rangel, Sabanilla. Its source in Cuba is perhaps as vague as that of the Jacquin type.

Another variation in Florida, thence north to South Carolina is

Var. **obtusifolia** (Small), comb. nov. *Schmaltzia obtusifolia* Small, Fl. Se. U. S. 729 (1903). *R. obtusifolia* Small, Fl. Miami, 112 (1913).

THE VARIATIONS OF ROTALA RAMOSIOR (PLATE 345).—*Rotala ramosior* (L.) Koehne occurs in two very distinct varieties: one with small fruits and minute subulate bractlets, chiefly on sandy shores of the Atlantic coastal plain northward to Massachusetts, with remote areas on the sands of the Great Lakes and on the Pacific slope; the other, coarser throughout, with conspicuously larger fruits and elongate, linear-lanceolate bractlets. The latter occurs in rich low

grounds from the Hudson Valley to Iowa and southward; both varieties occurring in Virginia, the source of the Clayton type. *Ammania ramosior* L., upon which *R. ramosior* was based, rested wholly on the Clayton (Gronovian) plant, no. 774. This has been carefully compared by the junior author with characteristic specimens of the two extremes. The type is clearly a large plant of the coastal plain extreme, with the smaller leaves, and the abundant fruit never wider than in the largest of a characteristic Florida sheet and none quite as long. The larger, chiefly inland variety should, therefore, be called

ROTALA RAMOSIOR (L.) Koehne, var. **interior** (TAB. 345, FIGS. 1 et 2), planta robusta ad 4.5 dm. alta simplex vel plerumque ramosa, ramibus adscendentibus; foliis majoribus 5–10 mm. latis subsessilibus vel breve petiolatis; fructibus (3.2–) 3.8–4.4 mm. latis 3.5–5 mm. longis; bracteolis lineari-lanceolatis, 1.6–2.4 (–4) mm. longis.—Rich low ground, Hudson Valley, New York to Iowa, south to Florida, Louisiana and Oklahoma. TYPE: low wet grounds, Knox Co., TENNESSEE, July 21, 1890, *Albert Ruth*, no. 224 (in Gray Herb.).

Contrasted with var. *interior*, typical *Rotala ramosior* is distinguished as follows:

R. RAMOSIOR, var. **typica** (PL. 345, FIG. 4 and 3, transitional). *Ammania ramosior* L. Sp. Pl. 120 (1753). *A. ramosa* Hill, Veg. Syst. xi. 14 (1767). *A. humilis* Michx. Fl. Bor.-Am. i. 99 (1803). *A. auriculata* Raf. Atl. Journ. 146 (1832). *Boykinia humilis* Raf. Aut. Bot. 9 (1840). *A. occidentalis*, var. *pygmaea* Chapm. Fl. So. U. S. 134 (1860). *R. ramosior* (L.) Koehne in Mart. Fl. Bras. xiii.^{2} 194 (1875). Plant low, simple to diffusely branched or depressed, rarely 2 dm. high: larger leaves 1.5–4 (–5) mm. broad, longer-petioled: fruit smaller, 2–3.3 mm. broad, 2–4 mm. long; bractlets subulate, 0.5–1.4 mm. long.—Sandy pond-shores, etc., coastal plain from Massachusetts to Florida and Texas; sands of southern Michigan, northern Indiana, Illinois and Minnesota; also Washington and Oregon.

Rafinesque, Aut. Bot. 39 (1840) gave names to "4 sp. or var. blended in *A. ramosa*" but his diagnoses, based merely on habit rather than more fundamental characters, are not clearly decipherable.

RHEXIA IN NORTHEASTERN AMERICA (PLATES 346 and 347).—In the area covered by Gray's Manual and Britton's Manual five species of *Rhexia* have been recognized: *R. virginica* L. (PL. 347, FIGS. 1–4, and PL. 346, FIG. 5), widespread from Nova Scotia southward and westward; *R. mariana* L. (PL. 347, FIGS. 5 and 6, and PL. 346, FIG. 7), from Florida north to southeastern Massachusetts, and reputed to grow in the interior; *R. interior* Pennell (PL. 346, FIG. 6 and PL. 347, FIG. 7), somewhat related to the two preceding; *R. aristosa* Britton (PL. 347, FIG. 8), an exceedingly local species of the coastal plain from Georgia

to New Jersey; and *R. ciliosa* Michx., a characteristic species of the southern pine barrens, which in Torrey and Gray's Flora of North America (1840) was recorded with doubt from Delaware and which has lingered in our manuals since the first edition (1848) of Gray, as growing in Maryland. No material of the latter is in the Gray Herbarium from north of North Carolina and the species was not admitted by Shreve to the flora of Maryland. It should be dropped from northern floras until there is definite evidence of it north of the Carolinas.

Field experience in southeastern Virginia failed to reveal any *Rhexia aristosa;* but it was evident that the abundant material of *Rhexia* there could not be referred merely to the two Linnean species. In fact, we and, in 1934 Fernald and Long found no true *R. mariana* and the only *R. virginica* found was a very local area in 1934. The identification of our material has, therefore, led to a consideration of the entire genus. We are here presenting our conclusions regarding it within the "Manual range."

The subterranean habit is fundamental but all too rarely well displayed in herbarium specimens; the size and distribution of muri-cations or processes on the seeds are apparently constant characters; so, too, is the relative length of the neck of the hypanthium. The two former characters are practically never mentioned in current treatments. Pubescence, breadth of leaf and color of flowers in our section of the genus are secondary.

The brilliantly reflecting or iridescent lustre of the seeds makes them difficult to bring out properly by photography. Consequently, Miss RUTH PEABODY, of Radcliffe College, has kindly supplied us with drawings, × 50, of the seeds needed in clarifying the more northern species of the genus. The photographs show, besides the newly proposed species, the characteristic bases of *Rhexia virginica* (PL. 347, FIGS. 9–11), and of *R. mariana* (PL. 347, FIG. 13), and, × 4, fruiting hypanthia of each of our species.

a. Leaves entire or only remotely serrate: calyx-lobes longer than neck of hypanthium; bristles of hypanthium not gland-tipped; petals aristate at apex: stem glabrous . . . . . 1. *R. aristosa.*

a. Leaves regularly serrulate: calyx-lobes shorter than to about equaling neck of hypanthium; bristles of hypanthium (when present) gland-tipped: petals not aristate-tipped: stems often more or less pubescent . . . . *b.*

b. Tuberous rooted, the bases not forming horizontal, subligneous runners: seeds 0.65–0.8 mm. long . . . . . 2. *R. virginica.*

b. Non-tuberous, the bases consisting of tap-roots and horizontally spreading or creeping subligneous stolon-like stems: seeds 0.5–0.6 mm. long.

Neck of fruiting hypanthium longer than body: stems subterete, not obviously 4-angled.....3. *R. mariana.*
Neck of fruiting hypanthium as long as or shorter than body: stems 4-angled, especially above.
Mature hypanthium (excluding calyx-lobes) 7.5–10 mm. long, its body 4–5 mm. in diameter: seeds with low rounded pebbling, the surface appearing relatively uniform.....4. *R. interior.*
Mature hypanthium 9–14 mm. long, its body 5.5–8 mm. in diameter: seeds with prominent thin ridges and slender papillae.....5. *R. ventricosa.*

1. R. ARISTOSA Britton, Bull. Torr. Bot. Cl. xvii. 14, t. 99. (1890).—Very locally in pine barrens, New Jersey to Georgia. PLATE 347, FIG. 8.

2. R. VIRGINICA L. Sp. Pl. 346 (1753).—Georgia to Louisiana, north to Nova Scotia and locally inland to central and western New York, southern Ontario, Ohio, Indiana, Wisconsin and Missouri. Type studied by junior author. PLATE 347, FIGS. 1–4, PL. 346, FIG. 5.

In *Rhexia virginica* the hypanthium has the neck very much shorter than the body and the very papillose seeds are the largest in this section. The pubescence is very variable, some plants from as far north as Nova Scotia being as glabrous as the southern *R. stricta* Pursh, which has the seeds as small as in *R. mariana.* The base, when properly collected, is absolutely distinctive. PLATE 347, FIG. 1 shows a tuber, × 1, from a gravelly shore, FIG. 2 from moss, FIG. 3 from inundated peat.

3. R. MARIANA L. A somewhat polymorphic species, clearly distinguished among those with horizontally spreading subligneous bases (PLATE 347, FIG. 5), by its terete or subterete stems and the long necks of the fruiting hypanthiums. We recognize three varieties:

Var. **typica.** *R. mariana* L. Sp. Pl. i. 346 (1753). *R. mariana,* var. β. *rubella* Michx. Fl. Bor.-Am. i. 221 (1803).—Leaves lanceolate to elliptic, subglabrous to hirsute: petals pale-rose to whitish, 1.2–2 cm. long; seeds rather sharply muriculate.—Florida, northward on the coastal plain to Cape Cod, Massachusetts. Type examined by junior author. PLATE 346, FIG. 7.

Var. PURPUREA Michx. Fl. Bor.-Am. i. 221 (1803). *R. Nashii* Small, Fl. Se. U. S. 824, 1335 (1903).—Rather coarser throughout: leaves lanceolate, more generally villous-hirsute: petals deep-rose-color or purple, 1.5–2.5 cm. long: seeds with conspicuous pebbling.—Louisiana to Florida, north on the coastal plain to southeastern VIRGINIA: about Franklin, Southampton Co., *Heller,* no. 1115; Northwest, Norfolk Co., *Heller,* no. 727; wet peaty clearings in woods of *Pinus serotina,* south of Grassfield, Norfolk Co., *Fernald & Long,* no. 4065; shallow pools and wet peaty depressions in pineland, Cape Henry, *Fernald & Griscom,* no. 2859, *Fernald & Long* no. 4061; inundated swales back of dunes, south of False Cape, Princess Anne Co., *Fernald & Long,* no. 4067. PLATE 346, FIGS. 5 and 6.

Var. **leiosperma,** var. nov. (TAB. 346, FIG. 8), a var. *typica* recedit seminibus obsolete muriculatis, papillis depressis.—Louisiana and

Texas northward to Missouri, southern Illinois and southern Indiana. The following are referred here. INDIANA: sandy soil 2 miles west of Grand View, Spencer County, *Deam*, no. 16,654. ILLINOIS: wet grassy places, Metropolis, August 16, 1902, *Gleason*. KENTUCKY: Monkey's Eyebrow, Ballard Co., August 14, 1928, *W. A. Anderson*. TENNESSEE: open grassy swamp, Hollow Rock Junction, Carroll Co., *Svenson*, no. 419; gravelly oak woods, 6 miles east of Crossville, alt. 2300 feet, *Svenson*, no. 4146. MISSOURI: Dunklin Co. *Bush*, no. 42. ARKANSAS: Pulaski Heights, Little Rock, *Demaree*, no. 8128; Little Rock, June 21, 1885, *W. H. Manning*. LOUISIANA: meadows, near Alexandria, *Ball*, no. 618. TEXAS: Houston, May, 1883, *Lindheimer;* eastern Texas, *E. Hall*, no. 198; damp sandy soil, Montgomery Co., July 18–21, 1909, *R. A. Dixon*, no. 487 (TYPE in Gray Herb.); near Texarkana, Barrie Co., *Heller & Heller*, no. 4143.

Var. *leiosperma* has a range covering that of *Rhexia interior*. The latter species, however, has quadrangular stems, broader, round-based and essentially sessile leaves suggesting those of *R. virginica*, short neck of hypanthium and coarser seeds with more obvious pebbling.

4. R. INTERIOR Pennell, Bull. Torr. Bot. Cl. xl. 480 (1918), renaming of *R. latifolia* Bush, RHODORA xiii. 167 (1911), not Aubl. (1775).—Pond-shores, wet ground and prairies, Missouri. PLATE 346, FIG. 6, and PL. 347, FIG. 7.

5. R. **ventricosa**, n. sp. (TAB. 346, FIGS. 1–4), planta etuberifera, radice verticaliter descendente caulibus subligniis stoloniformibusque horizontaliter reptantibus; caulibus floriferis quadrangulatis 2.5–8 dm. altis plus minusve hispidis laxe ramosis ramis adscendentibus; foliis elliptico-lanceolatis vel anguste oblongo-ovatis sessilibus vel subsessilibus 2–6 cm. longis 0.7–2.3 cm. latis valde 3-costatis hispidis; hypanthiis plus minusve glanduloso-setosis maturis 9–14 mm. longis, basi ventricosis 5.5–8 mm. diametro in collum subaequantium producto; lobis calycis deltoideo-lanceolatis 2–3 mm. longis divergentibus; petalis purpureis 1.5–2 cm. longis; antheris flavis 8–9 mm. longis angustis basi appendiculatis, appendiculis 1–2 mm. longis; seminibus cochleiformibus 0.5–0.6 mm. longis longitudinaliter angusteque costatis, costis valde papillosis, papillis angustis subremotis.—Southeastern Virginia and eastern North Carolina. VIRGINIA: vicinity of Norfolk, September, 1906, *M. C. Jansen*, as *R. virginica;* border of gum swamp, Pungo Causeway near Land of Promise, Princess Anne Co., *Fernald & Griscom*, no. 2856; dry clay of open woods and thickets, north of Blackwater River, Princess Anne County, *Fernald & Long*, no. 4066; open clay at border of woods, east of Little Creek, Princess Anne County, July 31, 1934, *Fernald & Long*, no. 4064 (TYPE in Gray Herb.); wet roadside ditch near Princess Anne Courthouse, *Fernald & Griscom*, no. 2857; wet meadow near Pungo, Princess Anne County, *Fernald & Griscom*, no. 2858. NORTH CAROLINA: grassy roadside bank, 8 miles south of Williamstown, Martin Co., *Wiegand & Manning*, no. 2146, as *R. mariana:* open dry sandy field, 6 miles west of Greenville, Pitt Co., *Wiegand & Manning*, no. 2148 (mixed with *R. mariana*).

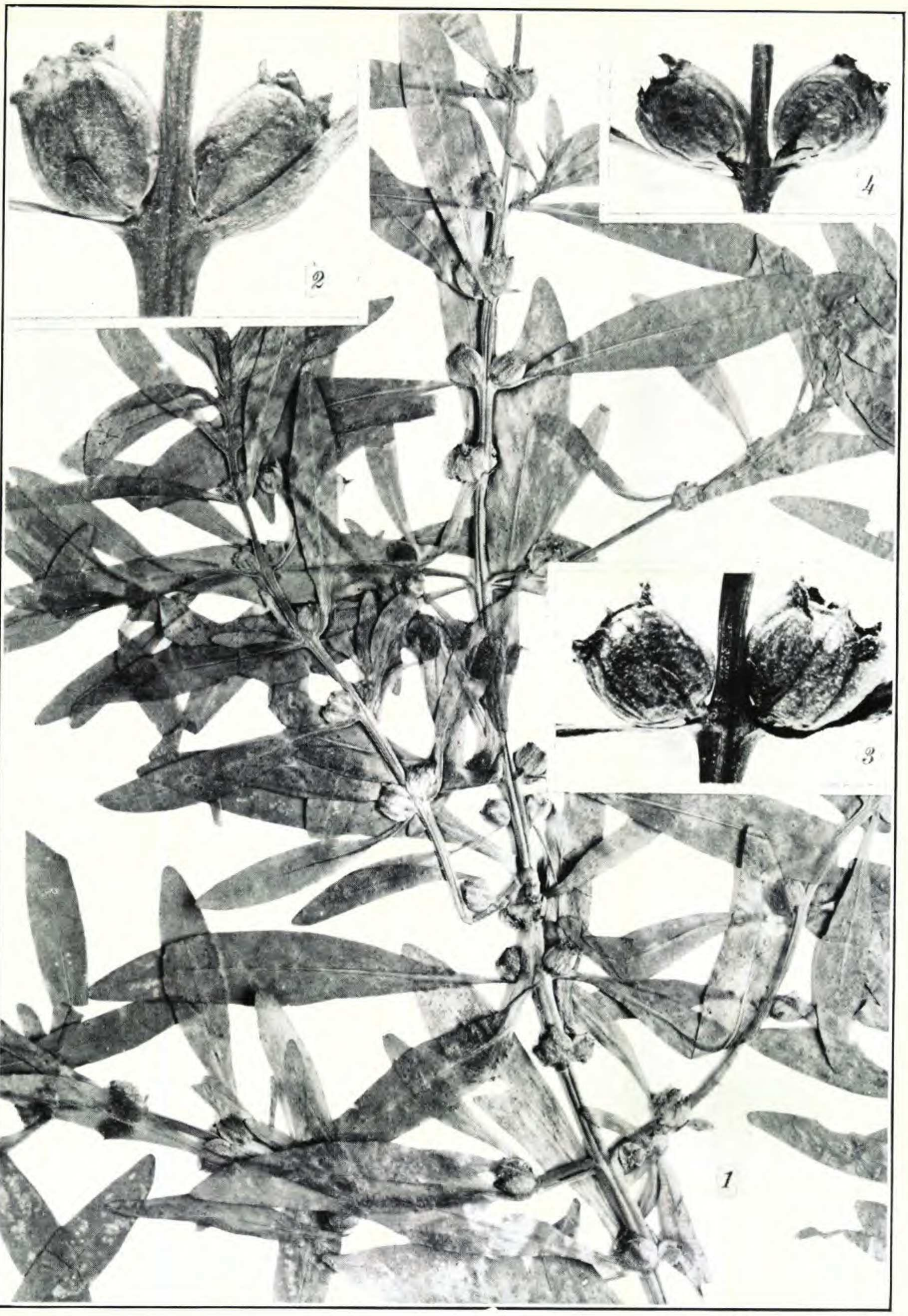

Photo. *E. C. Ogden*

ROTALA RAMOSIOR, VAR. INTERIOR: FIG. 1, portion of TYPE, × 1, from Tennessee; FIG. 2, fruit, × 5, from Ohio: FIG. 3, fruit (transitional), × 5, from Missouri.
R. RAMOSIOR (typical): FIG. 4, fruits, × 5, from Connecticut.

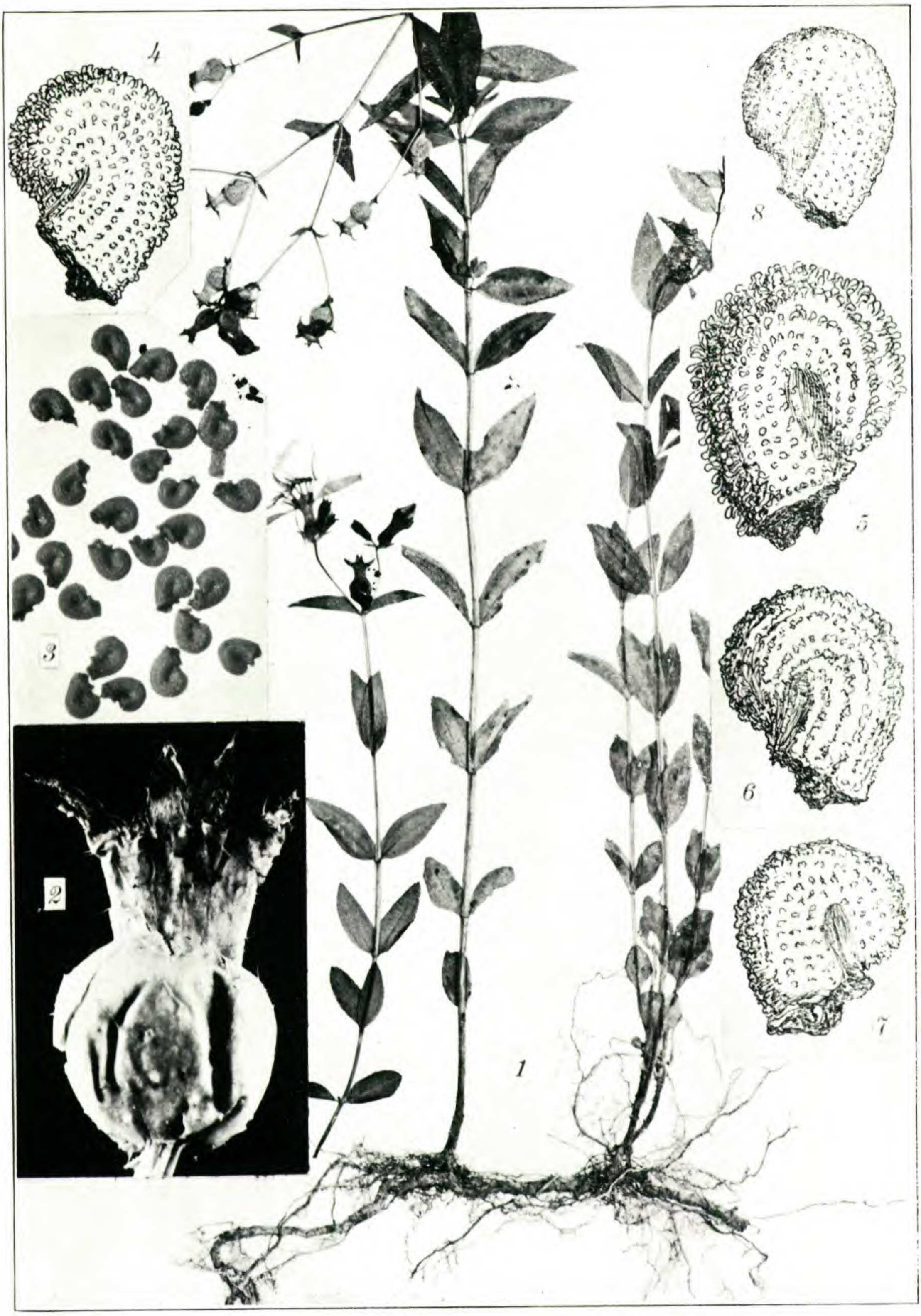

Photo. *E. C. Ogden*, drawings by *Ruth Peabody*.

RHEXIA VENTRICOSA: FIG. 1, TYPE, from Virginia, × ½; FIG. 2, fruiting hypanthium, × 4, from TYPE; FIG. 3, seeds, × 10 (by *J. F. Collins*) from Virginia; FIG. 4, seed, × 50, (from TYPE).

R. VIRGINICA: FIG. 5, seed, × 50, from Massachusetts.

R. INTERIOR: FIG. 6, seed, × 50, from Missouri.

R. MARIANA: FIG. 7, seed, × 50 from Massachusetts.

R. MARIANA, var. LEIOSPERMA: FIG. 8, seed, × 50, from Texas (TYPE).

Rhexia ventricosa superficially looks somewhat intermediate between *R. mariana* and *R. virginica*, but has a root system unlike either, a deep tap-root as in *R. virginica* but without the tubers which characterize that species, and horizontally spreading substoloniform branches (which occasionally develop slender stolons). Its stems are obviously square in section, but without the wing-angles of well developed *R. virginica* and the pubescence is sparser than in *R. mariana*. The leaves are somewhat intermediate in shape but without the distinct petiole and the well developed axillary fascicles of *R. mariana*. The flowers and fruits are nearly as in *R. mariana*, var. *purpurea* (*R. Nashii*) but the neck of the hypanthium is relatively short, and the calyx-lobes are nearly as long as the neck. The seeds lack a well developed dorsal crest and, under magnification, appear falsely alveolate from the deep shadows between the distinct or evenly spaced papillae.

The tendency of *Rhexia ventricosa* to prefer dryish or merely damp clay will be noted in the citation of specimens. In Princess Anne County we saw no *R. virginica*, though Fernald and Long got it in wet peat in a piece of pine barren in Norfolk Co., in 1934; and in both Princess Anne and Norfolk Counties *R. mariana*, var. *typica* seems to be wanting, its place there being taken by the southern var. *purpurea* (*R. Nashii*).

Rhexia ventricosa is, apparently, nearly related to *R. interior* Pennell: but it has a much larger hypanthium, with the ventricose body of greater diameter (whence the name), the calyx-lobes much larger and the papillae of the seeds slenderly columnar (in *R. interior* low and dome-like).

The Variations of Ludwigia sphaerocarpa (Plate 348). As currently interpreted *Ludwigia sphaerocarpa* Ell. Sk. Fl. S. C. and Ga. i. 213 (1821), of the southeastern coastal plain, extends northward to eastern Massachusetts and reappears in the isolated area of coastal plain types in northern Indiana. Our collection from Cape Henry, however, departs so definitely from the typical plant described by Elliott and, at the same time, is so unlike the plant with which we are familiar in Massachusetts, that it has seemed desirable to study the series with care. We find that the species breaks very naturally into four geographic trends.

Rameal leaves strongly reduced, glabrous or pubescent, lanceolate.
- Mature hypanthium small, 2.5–3.2 mm. long by 2.8–4 mm. broad, averaging broader than long.
  - Hypanthium only pubescent: glabrous leaves narrowly linear-lanceolate and attenuate ..... Var. *typica*.
  - Hypanthium, branches and leaves pubescent: leaves more broadly lanceolate, not attenuate ..... Var. *jungens*.
- Mature hypanthium larger, 3.5–4.6 mm. long, 3.2–4 mm. broad, averaging longer than broad ..... Var. *macrocarpa*.

Rameal leaves scarcely smaller than the primary ones, pubescent, narrowly oblong: stems pubescent: hypanthium pubescent, 3 mm. long, about as wide..... Var. *Deamii*.

Var. **typica** (FIGS. 1 and 2). *L. sphaerocarpa* Ell. l. c. (1821).—Coastal plain, from Louisiana to Florida, north to North Carolina, rarely to Rhode Island. The following northern specimens have been seen: NEW JERSEY: Bennett, Cape May Co., August 29, 1922, *J. M. Fogg, jr.*, no. 359. NEW YORK: Southampton, Long Island, *St. John*, no. 2829. RHODE ISLAND: Worden's Pond, South Kingstown, Washington Co., August 16, 1930, *Anderson, Collins, Lownes & Weatherby*.

In var. *typica* the flowers are mostly remote on the elongate branches; the "*Leaves* 2 inches long, 2 lines wide, very acute, base also acute, glabrous"—Elliott.

Var. **jungens**, var. nov. (FIGS. 3 et 4), var. *typicae* simillima a qua differt ramis foliisque pubescentibus, foliis lanceolatis vix attenuatis.—Southeastern Virginia to southern New Jersey and eastern Pennsylvania. VIRGINIA: pool in sandy barrens, Cape Henry, September 23, 1933, *Fernald & Griscom*, no. 2862 (TYPE in Gray Herb., isotype in herb. Griscom; growing dominantly in pool with *Psilocarya scirpoides*, var. *Grimesii*—see p. 00). DELAWARE: Ellendale, September 1, 1892, *A. Commons* (mixed with *L. linearis*). PENNSYLVANIA: Bristol, *E. Diffenbaugh*. NEW JERSEY: Cold Spring, Cape May Co., *Gershoy*, no. 504; Hammonton, Atlantic Co., 1882, *F. L. Bassett*, and 1917, *Gershoy*, no. 505.

Var. **macrocarpa**, var. nov. (FIGS. 5 et 6), var. *typicae* simillima a qua differt foliis glabris latioribus lanceolatis acutis vix attenuatis; floribus plerumque approximatis vel subapproximatis; fructibus 3.5–4.6 mm. longis, 3.2–4 mm. latis.—New Jersey to southeastern New York and eastern Massachusetts. Seen from the following localities: NEW JERSEY: Quaker Bridge, Atlantic Co., September, 1867, *C. F. Parker;* Delanco, Burlington Co., *Hermann*, no. 3638. NEW YORK: Staten Island, September, 1879, *N. L. Britton;* Manor, Long Island, 1871, *E. S. Miller;* Peekskill, Westchester Co., *Browne;* Lake Mohegan, July 24, 1887, *J. W. Martens, jr.* CONNECTICUT: West Pond, North Guilford, numerous collections; Killingworth, *E. H. Eames*, no. 11,046. RHODE ISLAND: Cranston, Providence Co., August, 1907, *Thos. Hope*. MASSACHUSETTS: Fall River, August 15, 1913, *Sanford;* Lakeville, Plymouth Co., numerous collections (TYPE: stony shore of Quitacas Pond, Lakeville, August 27, 1899, *W. P. Rich* in Gray Herb.); Upper Waltham Pond, near Prospect Hill (locality probably destroyed), *Asa Gray;* common in Concord River from Bedford to Billerica, numerous collections.

Var. **Deamii**, var. nov. (FIGS. 7 et 8), ramis foliis fructibusque pubescentibus; foliis anguste oblongis, longioribus vix 4 cm. longis obtusiusculis, foliis ramulorum vix reductis; fructibus 3 mm. longis, 3 mm. latis.—INDIANA: low border of Lake Walker, northwest of

Baileytown, Porter Co., August 23, 1925, *C. C. Deam*, no. 42,350 (TYPE in Gray Herb.).

NOTES ON LUDWIGIA, § ISNARDIA (PLATE 349). In studying our material it became apparent that this section of *Ludwigia* was in need of revision. In the latest treatment, in Small's Manual, four species of *Isnardia* are recognized, based primarily on the length of the capsule. Concerning *L. spathulata* T. & G. we have nothing to add; it seems to be a unique species.

Another well known southern species is *Ludwigia natans* Ell. or *Isnardia natans* (Ell.) Kuntze. This now appears as *I. repens* (Sw.) DC., based on *L. repens* Sw. Fl. Ind. Occ. i. 273, t. 8 (1797), a name preoccupied by one of the North American representatives of *L. palustris* (L.) Ell., which was first recognized as differing from the European type as *L. repens* Forst. Cat. Pl. N. Am. 22 (1771). There prove to be two strong tendencies of *L. natans* in the southeastern United States and a third isolated in southern California. These are characterized in the following key.

Mature fruit (excluding calyx-lobes) 4–5.6 (–6) mm. long. *L. natans*, var. *typica*.
Mature fruit 6–10 mm. long, usually more tapering at base.
  Fruit sessile or subsessile.....Var. *rotundata*.
  Fruit on distinct pedicels up to 4 mm. long.....Var. *stipitata*.

L. NATANS Ell., var. **typica**. *L. natans* Ell. Sk. Bot. S. C. and Ga. i. 581 (1821). *Isnardia natans* (Ell.) Ktze. Rev. Gen. i. 251 (1891). *I. intermedia* Small & Alexander in Small, Man. Fl. Se. U. S. 940 or *I. media* Small & Alexander, l. c. 1506 (1933), illegitimate names under the International Rules as adopted at Cambridge until validated by a Latin diagnosis.—Florida to Texas, north, locally, to North Carolina, Tennessee and Missouri; also Bermuda. FIG. 2, fruit, × 4.

Var. **rotundata** (Griseb.), comb. nov. *Isnardia repens*, var. *rotundata* Griseb. Cat. Pl. Cub. 107 (1866). *L. repens* Sw. Fl. Ind. Occ. i. 273, t. 8 (1797), not Forst. (1771). *I. repens* (Sw.) DC. Prodr. iii. 60 (1828). *L. fluitans* Scheele, Linnaea, xxi. 580 (1848). *L. repens*, β. *rotundata* (Griseb.) Gomez, Anal. Hist. Nat. Madrid, xxiii. 66 (1894). FIG. 3, fruit, × 4.

The Grisebach type was the rather unusual aquatic state of the long-fruited variety with dilated leaves, whereas most specimens in the herbaria are of the terrestrial state, with narrower and firmer leaves. The variety occurs in Mexico, the Greater Antilles, Bermuda, and from Georgia and Florida to Texas.

Var. **stipitata**, var. nov. (FIGS. 1 et 4), var. *rotundifoliae* simillima a qua differt floribus fructibusque pedicellatis, pedicellis usque ad 4 mm. longis.—CALIFORNIA: San Bernardino, August, 1881, *S. B. & W. F. Parish*, no. 682 (TYPE in Gray Herb.); other collections from

the same region by *Parish Bros.* and by *G. R. Vasey.* FIG. 1, node, × 1; FIG. 2, flower, × 4.

Ludwigia natans is most readily distinguished from the somewhat smaller *L. palustris* by its lacking the 4 longitudinal green bands on the hypanthium and by often having in their place 1 or more free or partly free long and narrow bractlets borne well above the base, the very short bractlet of *L. palustris*, when present, being basal.

There prove to be at least four strongly developed geographic trends in *Ludwigia palustris*, the typical Linnean plant being essentially European (extending slightly into western Asia and northern Africa). The four varieties may be distinguished as follows:

Longitudinal green bands of the hypanthium terminating well below the sinuses; body of fruit whitish and corky, 4–5.3 mm. long ..... Var. *typica.*

Longitudinal green bands extending nearly or quite to the sinuses; body of the darker and less corky fruit 2–4.5 mm. long.

Mature hypanthium 2 (rarely 1.8)–3.5 mm. in diameter at the middle; calyx-lobes broadly deltoid.

Leaf-blades of terrestrial state long-petioled, subacute to short-pointed, broad: calyx-lobes scarcely acuminate ... Var. *americana.*

Leaf-blades of terrestrial state short-petioled, usually acuminate and narrower: calyx-lobes acuminate ..... Var. *pacifica.*

Mature hypanthium 1.4–2 mm. in diameter at the middle; calyx-lobes narrowly deltoid to broadly lanceolate, acuminate: leaves long-petioled ..... Var. *nana.*

L. PALUSTRIS (L.) Ell., var. **typica**. *Isnardia palustris* L. Sp. Pl. 175 (1753). *L. palustris* (L.) Ell. Sk. Fl. S. C. and Ga. 211 (1821), as to name-bringing synonym.—Europe and adjacent Asia and Africa. FIG. 7, fruit, × 4.

Var. **americana** (DC.), comb. nov. *Isnardia palustris*, β. *americana* DC. Prodr. iii. 61 (1828). *L. repens* Forst. Cat. Pl. N. Am. 22 (1771), not Sw. (1797). *L. apetala* Walt. Fl. Carol. 89 (1788). *L. nitida* Michx. Fl. Bor.-Am. i. 87 (1803). *I. ascendens* Hall in Eat. & Wr. N. Am. Bot. 285 (1840). *L. palustris*, var. *Liebmanni* Lévl. Bull. Geogr. Bot. xxii. 24 (1912).—Nova Scotia, New Brunswick and southern Quebec to Minnesota, south to Georgia, Louisiana and Texas; eastern Washington, eastern Oregon and northeastern California to Guatemala; also Bermuda. FIG. 8, fruit, × 4.

Var. **pacifica**, var. nov. (FIGS. 5 et 9), var. *americanae* simillima a qua differt foliis angustioribus lanceolatis vel anguste ellipticis, apice attenuatis breviter petiolatis; fructibus 2.8–3.4 mm. longis, 2.2–2.8 mm. latis, lobis calycis anguste deltoideis acuminatis.—Pacific Coast from Vancouver Island and western Washington to California. TYPE: gravelly shore, Sproat Lake, VANCOUVER ISLAND, July 14, 1914, *W. R. Carter*, no. 128 (in Gray Herb.). FIG. 5, small plant of type collection, × 1; FIG. 9, fruit, × 4.

Var. **nana**, var. nov. (FIGS. 6 et 10), var. *americanae* simillima a qua differt laminis foliorum longe petiolatis minoribus rare 2.5 cm. longis;

fructibus 2.2–3 mm. longis 1.4–2 mm. latis, lobis calycis anguste deltoideis vel late lanceolatis acuminatis.—Southern Georgia and Florida along the Gulf to Texas; also Cuba, Haiti, southeastern Mexico and Columbia. TYPE: Cameron, LOUISIANA, July 5, 1903, *S. M. Tracy*, no. 8718 (in Gray Herb.). FIG. 6, fruiting branch, × 1; FIG. 10, fruit, × 4.

Var. *nana* in its small fruits and leaves is the greatest departure from typical *L. palustris*. Whereas the foliage of the terrestrial and aquatic states is very different in the other varieties, the two states are barely distinguishable in var. *nana*.

PROSERPINACA PALUSTRIS AND ITS VARIETIES.—The plant of southeastern Virginia impressed us as somewhat unlike the more familiar variation in the North. This impression was due to the large, broad-faced and very thin-angled fruits, whereas the plant of wide range, from Nova Scotia to Wisconsin, south to the interior of Georgia and Oklahoma has smaller and more elongate fruits 2.3–4 mm. broad, with merely subacute angles, while an extreme variation of the interior, var. *amblyogona* Fern. RHODORA, xi. 120 (1909), has the angles strongly rounded or almost obsolete.

The plant with broad and thin-angled concave-sided fruits 4–6 mm. broad has been called *P. palustris*, var. *latifolia* Schindler in Engler, Pflanzenr. iv[225]. 76 (1905); also *P. platycarpa* Small, Bull. N. Y. Bot. Gard. iii. 432 (1905). Var. *amblyogona* has also been taken up as a species, *P. amblyogona* (Fern.) Small, Man. Se. Fl. 954 (1933). In their vegetative characters there are no constant differences and the fruits show many transitions. Geographically, many of the plants of the coastal plain area from New Jersey to Nova Scotia are clearly transitional between the commoner northern variation and that of the Southeast. Similarly in the interior, it is sometimes difficult to recognize var. *amblyogona*.

Most unfortunately, a study of the type in the Linnean herbarium, the material described as *Proserpinaca palustris* L. Sp. Pl. 88 (1753), proves it to be the southeastern broad-fruited extreme, the plant called by Schindler var. *latifolia*, by Small *P. platycarpa*. Five ripe fruits remained (1934) on the type and two of these are actually a little larger than the largest fruit on a reference sheet from Cape May, New Jersey. It, accordingly, becomes necessary to characterize the common northern plant as

PROSERPINACA PALUSTRIS L., var. **crebra**, var. nov., fructibus minoribus 2.3–4 mm. latis, angulis subacutis nec alatis.—Nova Scotia to Wisconsin, south to Georgia and Oklahoma. TYPE:

Hampton, NEW HAMPSHIRE, August 31, 1902, *E. F. Williams* (in Gray Herb.).

IPOMOEA HEDERACEA (L.) Jacq., var. INTEGRIUSCULA Gray. VIRGINIA: roadside bank, Back Bay, Princess Anne Co., no. 2877.

Cited by Small under *Pharbitis barbigera* (Sims) G. Don, only north to Georgia. The fresh flowers were bright azure-blue; in the dried material they have faded to reddish-pink.

LIPPIA LANCEOLATA Michaux. Michaux described *L. lanceolata* "foliis lineari-lanceolatis" from the Ashley River, South Carolina. Nevertheless, the species, given a broad inland range, was described by Gray with leaves "varying from obovate and lanceolate-spatulate to ovate" and with the special comment "name therefore inapt." Gray's impression was due to the fact that in his day there was no material in the Gray Herbarium (at least) of the narrower-leaved plant which Michaux had accurately described (PLATE 350, FIG. 1). We now know the narrow-leaved extreme as a plant of the outer coastal plain, from Cape May, New Jersey to South Carolina and Louisiana. The wide-ranging broad-leaved extreme seems to have no available name and we, therefore, call it

LIPPIA LANCEOLATA Michx., var. **recognita**, var. nov. (TAB. 350, FIG. 2), foliis obovatis vel late lanceolato-spathulatis vel anguste ovatis.—TYPE: swampy places, Fremont Co., IOWA, July 30, 1898, *T. J. Fitzpatrick* in Gray Herb. Eastern Pennsylvania to southern Ontario, Iowa and Nebraska, south to Florida, Louisiana, Texas and adjacent Mexico.

PHYSALIS MARITIMA M. A. Curtis. VIRGINIA: sand hills, Cape Henry, no. 2885.

Physalis maritima is the maritime plant, with elliptic or oblong and obtuse stellate-puberulent leaves attenuate to the short petiole, which is included in the North American treatments under *P. viscosa* L. The latter species was based, however, both by Linnaeus and Gronovius (before him) on a plant described and excellently illustrated by Dillenius from Buenos Aires, with cordate leaves. Abundant material from Argentina and adjacent countries well represents *P. viscosa*, which has nothing to do with the plant of coastal sands of our southeastern states.

The ascription of *Physalis viscosa* of American authors to "Virginia" goes back to Gronovius, who, obviously, had something else in hand.

GALIUM TINCTORIUM L., var. FLORIDANUM Wieg. VIRGINIA: brackish marsh, Pungo Ferry, Princess Anne Co., no. 2890.

Although Wiegand cited this variety only from Florida, our material is a perfect match for the type-collection.

EUPATORIUM CUNEIFOLIUM Willd., var. **semiserratum** (DC.), comb. nov. *E. semiserratum* DC. Prodr. v. 177 (1836).

We are unable to find any characters in the involucres, corollas and achenes by which to keep *E. semiserratum* specifically apart from *E. cuneifolium*. The extreme difference in leaf-outline and degree of toothing is marked but many transitional specimens occur.

EUPATORIUM ROTUNDIFOLIUM AND ALLIES. Long field experience with *Eupatorium rotundifolium* and the plants associated with it as related species, in many parts of their range, has convinced us that extensive modification of the present specific concept is necessary, if we are to interpret correctly the highly variable mass of material. As currently treated, the series *Rotundifoliae* consists of *E. sessilifolium* L., a glabrous plant with obtuse or obtusish involucral bracts and very long-acuminate, finely serrate leaves with strongly rounded to truncate, closely sessile bases; and, set off from this usually clear-cut species, another group, *E. rotundifolium* L., *E. pubescens* Muhl., *E. scabridum* Ell. and *E. verbenaefolium* Michx., characterized by acute to attenuate inner bracts and shorter, thicker and pubescent blunt or merely acute leaves, with coarser and blunter toothing. These four prove to be bewilderingly variable in shape, size and toothing of the leaves; and search for more stable characters has led us to the conclusion that the treatment of Asa Gray in the Synoptical Flora was correct, *E. scabridum* and *E. pubescens* being reduced to varietal rank under *E. rotundifolium*. We should go further and unite with them *E. verbenaefolium* of current treatments (*E. teucrifolium* of the Synoptical Flora). *E. sessilifolium* has the tube of the corolla nearly equaling the throat (as in *E. hyssopifolium*), while all the others agree in having the tube much shorter than the throat. In every other character extreme specimens in both groups definitely converge.

Eupatorium sessilifolium is primarily a species of rich or calcareous areas and is unknown on the typical sandy and acid soils of the coastal plain, where the others are dominant. It is ordinarily very distinct from the other four, separated by the characters noted above; but from Maryland and the District of Columbia inland to the mountains of Virginia, West Virginia and Tennessee a remarkable extreme is dominant, which entirely lacks the characters conventionally ascribed to the species, except in having the corolla of *E. sessilifolium*. The stem of this plant is densely cinereous-puberulent; both surfaces of the leaves are often similarly and densely puberulent; and the

leaves are shorter, broadly ovate to ovate-lanceolate and acute, but never with the long acumination characteristic of typical glabrous *E. sessilifolium*. This plant, has consequently, been distributed by collectors either as *E. sessilifolium ?*, *E. pubescens* or a hybrid of the two; and it was described as *E. Vaseyi* by Porter, Bull. Torr. Bot. Cl. xix. 128 (1892). Having the distinctive corolla of *E. sessilifolium*, this plant is evidently a well defined variety of that species. The type, from Lookout Mt., Tennessee, kindly loaned by Dr. Maxon to Dr. Robinson, is before us as we write. The other specimens examined by us are enumerated below, under

E. SESSILIFOLIUM L., var. **Vaseyi** (Porter), comb. nov. *E. Vaseyi* Porter, Bull. Torr. Bot. Cl. xix. 128 (1892). MARYLAND: dry woods between Quantico and Salisbury, *Tidestrom*, no. 7427. DISTRICT OF COLUMBIA: in vicinis Washington, September 30, 1877, *L. F. Ward;* Brooklands, September 1, 1895, *Holm;* thickets, September 11, 1896, *Steele*. VIRGINIA: The Pinnacle, Lee Co., July 27, 1892, *Small;* Halifax, August, 1927, *Wm. Rhoades;* Bedford Co., August 31, 1871, *A. H. Curtiss;* Craigs, Craig Co., *Steele*, no. 21; dry rocky woods along Potto Creek, 7 miles from Covington, Alleghany Co., *Griscom*, no. 18,780. WEST VIRGINIA: Dailey's Post Office, Jefferson Co., *Wm. Palmer*, no. 49; dry roadside thicket, Upshur Co., *S. S. Dickey*, no. 156.

The other four so-called "species" prove to have no constant or fundamental characters separating them. The plants currently called *E. verbenaefolium* and *E. rotundifolium* are two well marked extremes, but *E. pubescens* is a hopeless series of leaf variations, containing every possible connecting stage between these two extremes in outline. Indeed, unrecorded variations have membranaceous and smooth, instead of thick and rough, leaves; while occasional plants have obtusish rather than acutish bracts. Eighty per cent of the plants growing west of or outside of the coastal plain belong to this intermediate series, and field experience is required to understand their distribution. Thus, in the Shenandoah valley and in the Alleghanies of Virginia and West Virginia, one of the surprises of local work is the presence of coastal plain species in limestone barrens or sandy valleys, with the rich piedmont flora flourishing on the wooded hillsides a hundred yards away. No hint of this situation can be found on the labels of older collections.

There are also difficulties in nomenclature. The available names are nearly all specific; they are old names and the types, all in European herbaria, have never been critically discussed by a person familiar with the genus today. Photographs of nearly all of them are now in the Gray Herbarium, thanks to the interest of Dr. Robinson, who

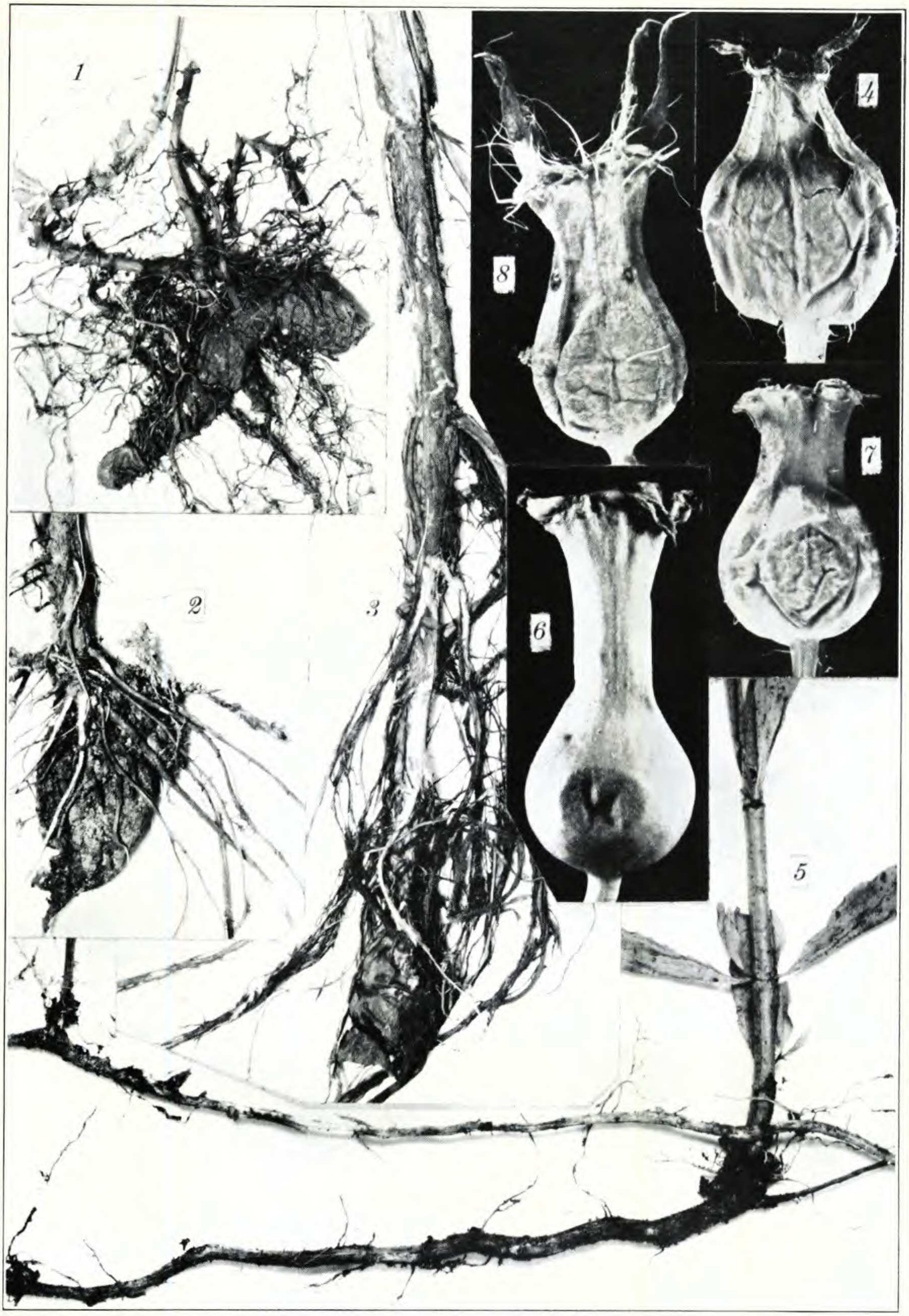

Photo. *E. C. Ogden.*

RHEXIA VIRGINICA, bases of plant, × 1: FIG. 1, from gravel; FIG. 2, from moss; FIG. 3, from bog; FIG. 4, fruiting hypanthium, × 4, from West Virginia.

R. MARIANA, var. PURPUREA: FIG. 5, base of plant, × 1, from Virginia; FIG. 6, fruiting hypanthium, × 4, from Mississippi.

R. INTERIOR: FIG. 7, fruiting hypanthium, × 4, from Missouri.

R. ARISTOSA: FIG. 8. fruiting hypanthium, × 4, from Georgia.

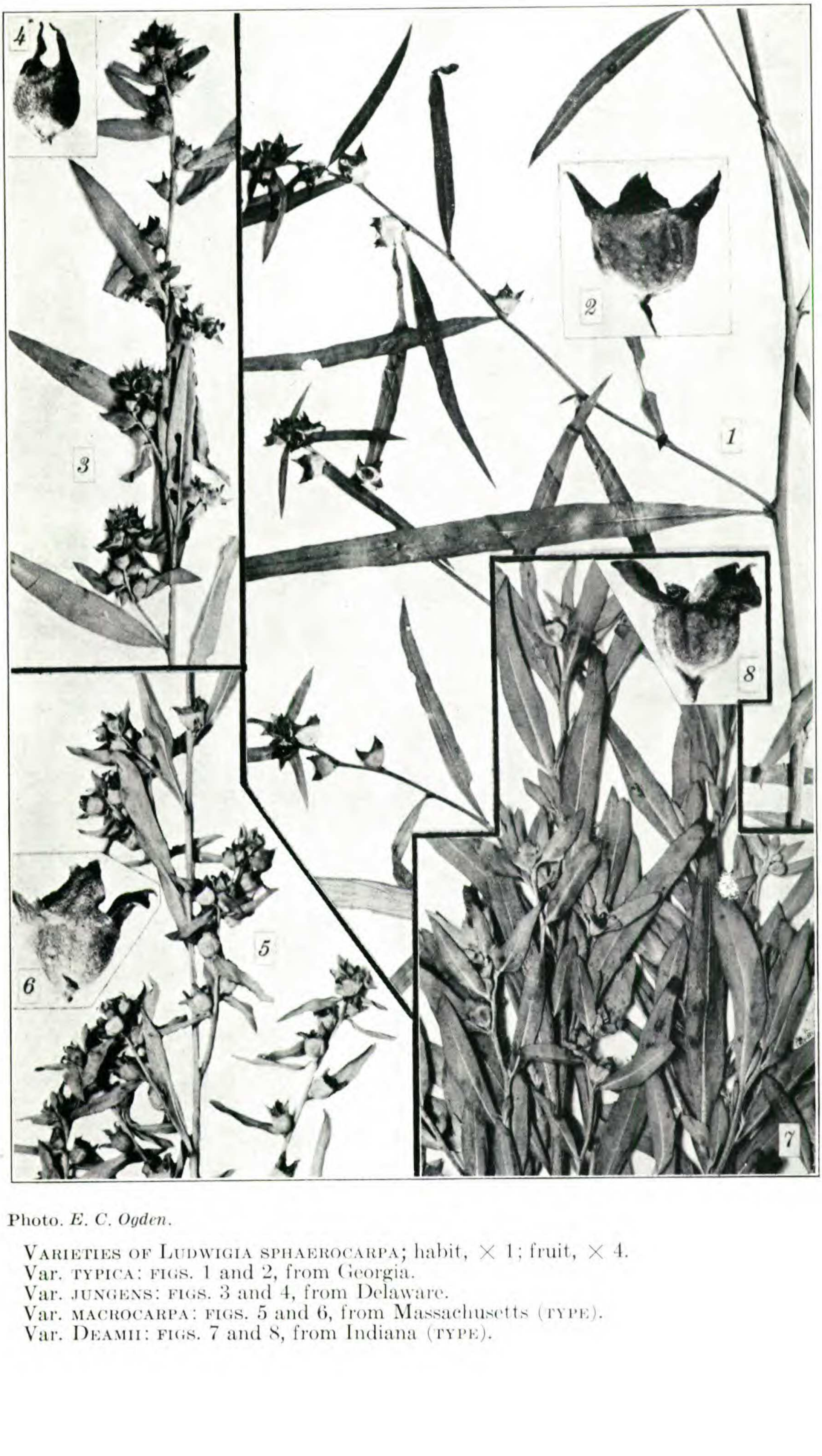

Photo. *E. C. Ogden.*

VARIETIES OF LUDWIGIA SPHAEROCARPA; habit, × 1; fruit, × 4.
Var. TYPICA: FIGS. 1 and 2, from Georgia.
Var. JUNGENS: FIGS. 3 and 4, from Delaware.
Var. MACROCARPA: FIGS. 5 and 6, from Massachusetts (TYPE).
Var. DEAMII: FIGS. 7 and 8, from Indiana (TYPE).

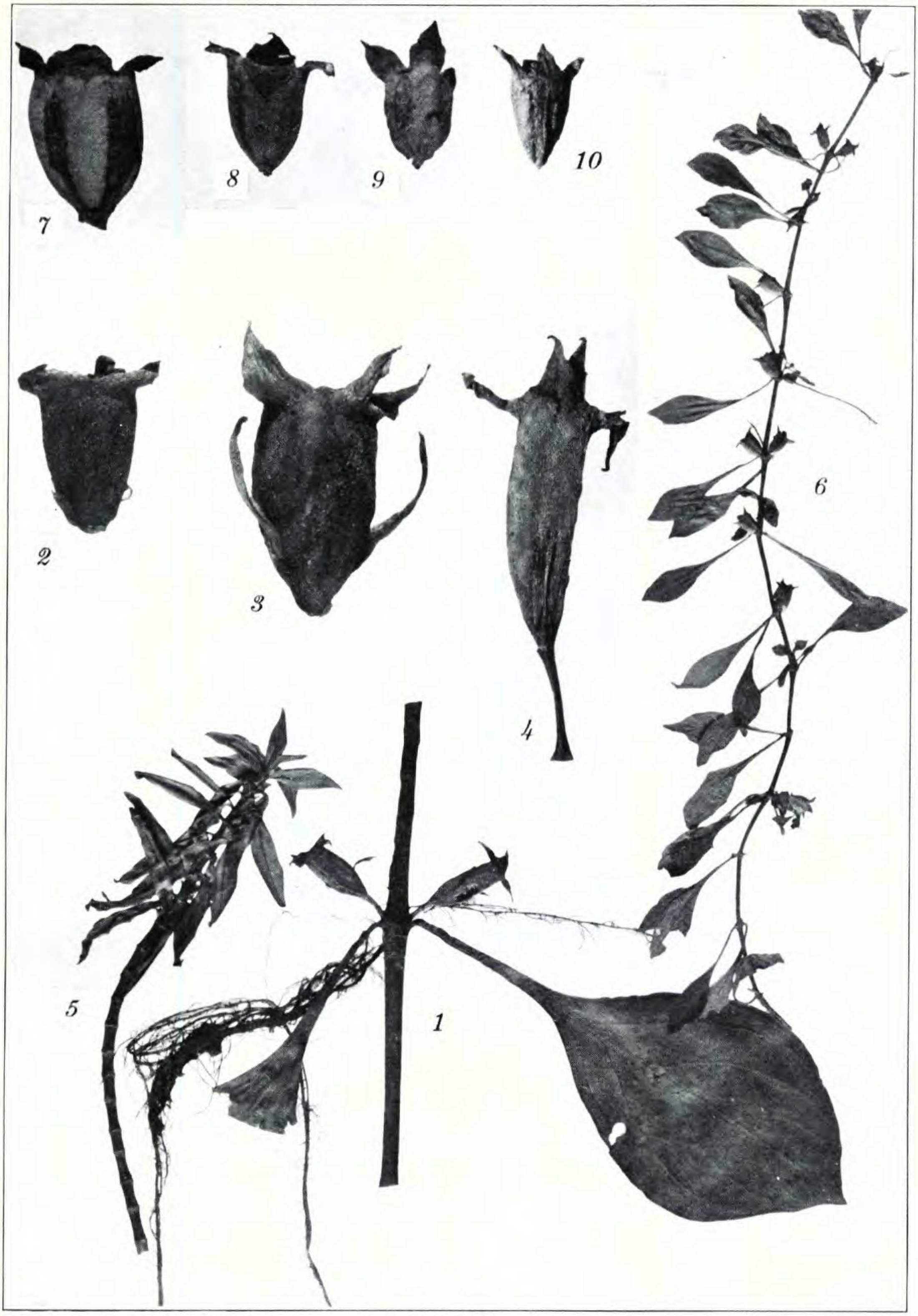

Photo. *J. F. Collins.*

LUDWIGIA, § ISNARDIA; branches, × 1; fruits, × 4.
L. NATANS, var. TYPICA: FIG. 2, from Florida.
L. NATANS, var. ROTUNDATA: FIG. 3, from Texas.
L. NATANS, var. STIPITATA: FIGS. 1 and 4, from California.
L. PALUSTRIS, var. TYPICA: FIG. 7, from Russia.
L. PALUSTRIS, var. AMERICANA: FIG. 8, from Massachusetts.
L. PALUSTRIS, var. PACIFICA: FIGS. 5 and 9, from Vancouver Island (TYPE).
L. PALUSTRIS, var. NANA: FIG. 6, from Florida; FIG. 10, from Louisiana (TYPE).

Photo. *E. C. Ogden.*

LIPPIA LANCEOLATA: FIG. 1, flowering branch, × 1, from Virginia.
L. LANCEOLATA, var. RECOGNITA: FIG. 2, flowering branch, × 1, from Iowa (TYPE).

has most kindly placed them at our disposal. Their study makes it quite impossible to endorse current stereotyped usage in several cases. A summary of these types is given below.

E. ROTUNDIFOLIUM L. = *E. rotundifolium* as currently understood.
E. VERBENAEFOLIUM Michx. = *E. pubescens* as currently understood.
E. TEUCRIFOLIUM Willd. = *E. pubescens* as currently understood.
E. PUBESCENS Muhl. = *E. pubescens* as currently understood.
E. LANCEOLATUM Muhl. in Willd., of which we have seen no photograph but of which Muhlenberg's own material is preserved at the Academy of Sciences of Philadelphia, is clearly the narrow-leaved extreme of *E. verbenaefolium* as currently understood, and Asa Gray was quite correct in citing it under his *E. teucrifolium*, not the *E. teucrifolium* of Willd.

Those who wish to maintain these three "species" must determine the identity of Walter's *E. pilosum* and *E. Marrubium* to settle the nomenclature. We cannot interpret *E. Marrubium* any better than Asa Gray, but *E. pilosum* is obviously either the *E. pubescens* or *E. verbenaefolium* of current manuals and is a far older name than either. We do not settle the identity of these Walter types, as we do not regard these plants as species and are consequently solely concerned with varietal names. We recognize the following varieties:

E. ROTUNDIFOLIUM L., var. **typicum.** *E. rotundifolium* L. Sp. Pl. 837 (1753).—Leaves suborbicular to broadly deltoid-ovate, relatively small, the middle ones 2–5.5 cm. long, nearly as broad as long, usually strongly canescent on both surfaces; the rounded to subacute teeth relatively uniform; uppermost leaves very rarely alternate (in only 3 out of 65 sheets examined).—Passing freely into

Var. OVATUM (Bigelow) Torrey in DC. Prodr. v. 178 (1836). *E. ovatum* Big. Fl. Bost. ed. 2: 296 (1824). *E. pubescens* Muhl. in Willd. Sp. Pl. iii. 1755 (1804).—Leaves often less pubescent, in extreme cases thinner and glabrate, with coarser toothing; lower and median ovate to elliptic or broadly oblong, obtuse to subacute; the middle ones 4–10 cm. long; uppermost leaves rarely alternate (in 13 out of 74 examined).

Var. SCABRIDUM (Elliott) Gray, Syn. Fl. i.^{2} 99 (1884). *E. scabridum* Ell. Sk. ii. 298 (1821–24).—Stems puberulent; leaves scabrous-puberulent, rhombic-ovate, often cuneate at base, the larger 3–6.5 cm. long, the toothing much as in var. *typicum;* uppermost cauline leaves rarely alternate (in 4 out of 23).

Var. **lanceolatum** (Muhl.), comb. nov. *E. lanceolatum* Muhl. ex Willd. Sp. Pl. iii. 1752 (1804). *E. verbenaefolium* of recent authors, not Michx. *E. teucrifolium* of recent authors, not Willd.—Lower and middle leaves narrowly lance-ovate to elliptic-oblong, obtuse to acute; the median 4–9 cm. long, with relatively few, coarse teeth, the lower teeth often prolonged; uppermost leaves narrowly ovate to lanceolate, acute to acuminate, usually alternate (in 68 out of 78); pubescence and texture much as in var. *ovatum*.

EUPATORIUM PERFOLIATUM L., var. **colpophilum**, var. nov., a forma typica differt caulibus glabratis vel puberulis; foliis glabrescentibus angustioribus 0.6–2.5 cm. latis; involucris glabrescentibus nec non dense pilosis.—Tidal flats of the St. Lawrence River, Quebec and the Kennebec-Androscaggin system, Maine. The following (all collections seen from these estuaries) belong here. QUEBEC: Berthier, Montmagny Co., July 14, 1922, *Fernald & Pease*, no. 25,296; Berthier, August 13, 1925, *Rousseau*, no. 21,300 (TYPE in Gray Herb.); St. Augustine, Portneuf Co., August 7, 1923, *Svenson & Fassett*, nos. 2050 and 2051 (individual with 3 leaves); Beauport, August 8, 1922, *Victorin*, no. 15,347. MAINE: Bowdoinham, September 14 and 19, 1916, *Fernald & Long*, no. 14,650; Bowdoinham, August 24, 1921, *Fassett*, nos. 343–346.

Much of the Maine material has been referred to forma *purpureum* Britton, because of the purplish involucres and flowers. Forma *purpureum*, however, is a purplish-flowered form of typical *E. perfoliatum*, with densely pilose involucre and pubescent leaves. Var. *colpophilum* was detected by us while studying the variations of *E. perfoliatum* in our Virginia collections. The species is very variable and we feel, after going over much material, that var. *truncatum* (Muhl.) Gray (*E. truncatum* Muhl.) is not a true variety or anything but an occasional aberration. *E. cuneatum* Engelm. (*E. perfoliatum*, var. *cuneatum* Engelm.), however, with campanulate heads and short round-tipped involucral bracts is apparently a distinct species, nearly related to the local *E. resinosum* Torr. of pine barrens of New Jersey and Delaware.

LIATRIS GRAMINIFOLIA Willd., var. **Smallii** (Britton), comb. nov. *Laciniaria Smallii* Britton, Man. 927 (1901). VIRGINIA: dry oak woods, The Desert, Cape Henry, no. 2907.

Our material, growing with other typical Alleghenian plants in comparatively rich woods, is a perfect match for the type-collection of *Laciniaria Smallii*, from Iron Mountain, Smyth Co. A well defined variety on account of its comparatively open inflorescence, often with peduncled heads, and its often broad lower leaves, the plant seems to have no satisfactory characters to separate it specifically from *Liatris graminifolia*. Var. *Smallii* is a characteristic plant of the Alleghenies from southwestern Virginia to Georgia and Tennessee. Its discovery at Cape Henry adds another to the considerable list of Alleghenian types isolated there.

In studying the variations of *Liatris graminifolia* one other variety has seemed to us specially worthy of note. This is the hirsute plant, dominant near the northern end of the range of the species, in New